Paper 15 - Business Strategy and Strategic Cost Management

This paper contains 4 questions. All questions are compulsory, subject to instruction provided against each questions. All workings must form part of your answer. Assumptions, if any, must be clearly indicated.

Full Marks: 100 **Time allowed: 3 hours**

1. Read the case and answer the following questions

In 2006-07 PTC Food division decided to enter the fast growing (20-30% annually) snacks segment, an altogether new to it. It had only one national competitor-Trepsico's Trito. After a year its wafer snack brand Ringo, fetched 20% market share across the country. Ringo's introduction coincided with the cricket world cup. The wafer snacks market is estimated to be around ₹ 250 crores.

The company could take the advantage of its existing distribution network and also source potatoes from farmers easily. Before the PTC could enter the market a cross-functional team made a customer survey through a marketing research group in 14 cities of the country to know about the snacks eating habits of people. The result showed that the customers within the age-group of 15-24 years were the most promising for the product as they were quite enthusiastic about experimenting new snack taste. The company reported to its chefs and the chefs came out with 16 flavours with varying tastes suiting to the target age-group.

The company decided to target the youngsters as primary target on the assumption that once they are lured in, it was easier to reach the whole family.

Advertising in this category was extremely crowded. Every week two-three local products in new names were launched, sometimes with similar names. To break through this clutter the company decided to bank upon humour appeal.

The Industry sources reveal that PTC spent about ₹ 50 crores on advertisement and used all possible media print and electronic, both including the creation of its own website, Ringoringoyoungo.com with offers of online games, contests etc. Mobile phone tone downloading was also planned which proved very effective among teenagers. The site was advertised on all dotcom networks. Em TV, Shine TV, Bee TV and other important channels were also used for its advertisement along with FM radio channels in about 60 cities with large hoardings at strategic places.

Analysts believes that Ringo's success story owes a lot to PTC's widespread distribution channels and aggressive advertisements. Humour appeal was a big success. The 'Ringo' was made visible by painting the Railway bogies passing across the States. It has also been successful to induce Lovely Brothers' Future Group to replace Trito in their Big-Bazaar and chain of food Bazaars. PTC is paying 4% higher margin than Trepsico to Future group and other retailers.

Ringo to giving Trepsico a run for its money. Trito's share has already been reduced considerably. Retail tie-ups, regional flavours, regional humour appeals have helped PTC. But PTC still wants a bigger share in the market and in foreign markets also, if possible.

Required:

(i) Define SWOT Analysis.
(ii) Explain the strength of PTC.
(iii) Describe the weaknesses of PTC for entering into the branded snacks market.
(iv) Discuss different kind of marketing strategy was formulated and implemented for Ringo.
(v) What else need to be done by Ringo so as to enlarge its market? [4+4+4+4+4]

Answer:

(i) SWOT analysis is a tool used by organizations for evolving strategic options for the future. The term SWOT refers to the analysis of strength, weaknesses, opportunities and threats facing a company. Strengths and weaknesses are identified in the internal environment, whereas opportunities and threats are located in the external environment.

Strength: Strength is an inherent capability of the organization which it can use to gain strategic advantage over its competitor.
Weakness: A weakness is an inherent limitation or constraint of the organisation which creates strategic disadvantage to it.
Opportunity: An opportunity is a favourable condition in the external environment which enables it to strengthen its position.
Threat: An unfavourable condition in the external environment which causes a risk for, or damage to the organisation's position.

(ii) The strengths of PTC are:

- PTC has an existing distribution network that is used to its advantage.
- The company has strengths in the area of procurement of potato, raw material to make the wafers.
- Financially the company is very strong as they are spending 50 crores on advertising in a market worth 250 crores.
- The company has diverse flavours of wafers in its portfolio that are according to the different tastes of the target group.
- PTC has done good bargaining deals with food bazaars and food chains.
- The cross-functional team of PTC made a virtuous marketing research.

(iii) Weaknesses are inherent limiting factors of an organization. They are internal by nature to the working of the organization. The case study does not clearly mention the points that can conclusively be weaknesses of the company. However, a deeper analysis will bring out that the company is totally new to the snacks business and is highly aggressive in its approach.

The experience in the food business may not result in the required competencies in the business of chips. Seemingly, the company has also gone overboard in its advertisement expenditure. It may be that the margins justify expenditure of 20% in value of the total market size of Rs. 250 Crores. Otherwise, the company may come into financial difficulties. Creating market may also be difficult as already there are many players who are trying to get attention of existing and new customers.

The business is already cluttered with regional and national players and is highly competitive. Further, the company is overly relying on young segment of the population. This segment can be highly receptive to the new products and the company may lose them easily to the competitors.

(iv) Formulation and Implementation of marketing strategy was as under:
The Product: To launch its snack product, an easy to remember brand name RINGO was decided upon. To understand the snacking habits of Indian customer a large survey was undertaken. Chefs on the basis of the market survey came out with sixteen flavours. The target group was identified as youngsters of 15 – 24 years.
The Promotion: The Company spent about Rs. 50 crore on marketing communication. Different Media including print, electronic and outdoor advertising were put to use. Appeal used was that of humour. A huge visibility through point-of-sale was also arranged. Promotion policy was very aggressive considering that 50 crores were spent in a market of 250 crores.
The Place: Getting Trito replaced by Ringo in Big-Bazaar and food Bazaar chain of stores was a great success for PTC. To motivate a higher margin than the Trepsico was provided for. PTC even otherwise has extensive distribution network.

(v) A perfect blend of marketing mix has made it possible to go so far and so early. Since the marketing strategy has remained successful, they need to carry it forward. However, they also need to keep a restrain on promotion as spending huge amount of money on marketing for a share in the market of 250 crores seems to be too high. Such an expensive campaign is only suitable if the company is able to increase the market size itself and not merely its own in the existing market share. To achieve this it requires competencies. Otherwise, it might be difficult to sustain high expenditure over a very long period of time.

2. Answer any two questions from (a), (b) and (c): [2 x 15 =30]

(a)

(i) Discuss the Simultaneous and Sequential games

(ii) List any eight advantages and any four disadvantages of the Global Strategic Alliance.

(iii) Difference between Policy and Strategy. [5+6+4]

Answer:

(i) A game can either be one in which moves (or choices) take place sequentially (as in chess) or one in which choices are made simultaneously, as in the children's game rock-paper-scissors. As we shall see, the distinction between simultaneous and sequential games is not so much about the timing of the moves (whether moves are made at the same time or at different times) but rather about the information available to players when a move is made. In a sequential game, a player knows which particular choice her opponent has made from all those available to her, whereas simultaneous games involve players making choices prior to information becoming available about the choice made by the other.

Business games are rarely, if ever, ones in which decisions are made exactly at the same point in time by all relevant firms. However, because it is often the case that companies must select from options before knowing what options rivals have selected, many business choices are best analyzed as taking place within the framework of simultaneous games. In other words, we think of matters as if all players must select a strategy at the same time.

Most actual games probably combine elements of both simultaneous and sequential move games.

There are several other concepts that will be necessary for an understanding of game theory, but we shall introduce these as we go along.

(ii) Advantages of the Global Strategic Alliance

There are many specific advantages of a global strategic alliance. You can:

- Get instant market access, or at least speed your entry into a new market.
- Exploit new opportunities to strengthen your position in a market where you already have a foothold.
- Increase sales.
- Gain new skills and technology.
- Develop new products at a profit.
- Share fixed costs and resources.
- Enlarge your distribution channels.
- Broaden your business and political contact base.
- Gain greater knowledge of international customs and culture.
- Enhance your image in the world marketplace.

[Answer any 8 points]

Disadvantages of the Global Strategic Alliance

There are also some inevitable trade-offs to consider:

- Weaker management involvement or less equity stake.
- Fear of market insulation due to local partner's presence.
- Less efficient communication.
- Poor resource allocation.
- Difficult to keep objectives on target over time.

- Loss of control over such important issues as product quality, operating costs, employees, etc.

[Answer any 4 points]

(iii) Difference between strategy and policy

Policy	Strategy
Policy is a statement of an organization's intention to act in certain ways in specific situation. It represents a general decision establishing a normal pattern of conduct.	Strategy is the determination of the basic long-term goals and objectives of an enterprise and the adoption of the courses of action and the allocation of resources necessary for carrying out these goals.
It is a guideline to the thinking of final decision.	It concerns with the direction in which resources are applied.
It is contingent decision.	It is a rule for taking decision.
Since the policy is prescribed for the people so it can be delegated downward in the organization.	Since strategy requires last minute executive decisions so it cannot be delegated downward

(b)

(i) Discuss different types of Value Chain Activities.

(ii) Mention any eight qualities of Strategic Leaders. **[7+8]**

Answer:

(i) Value chain is defined as "the linked set of value-creating activities all the way from basic raw material sources for component suppliers to the ultimate end-use product or service delivered to the customer."

Porter depicts the value chain, comprising the above interrelated primary and secondary activities, shown in the above figure. Porter classified the full value chain into nine interrelated primary and support activities. Primary activities can be related to actions which the organization performs to satisfy external demands while secondary activities are performed to serve the needs of 'Internal Customers'.

Primary activities are the fundamental activities performed by an organization in order to be operative. They are: (a) Inbound logistics, (b) Operations, (c) Outbound logistics, (d) Marketing and sales and (e) Service.

Secondary activities are support activities, i.e. those activities required to ensure the efficient performance of the primary activities. Support activities are: (a) Infrastructure, (b) Human resources management, (c) Technology development, and (d) Procurement.

Primary Activities

- **Inbound Logistics -** Inbound logistics cover all the activities performed to have goods and services available for the operational processes as and when they will be required. This may include buying, transport, receiving, inspection, storage, etc.
- **Operations -** These are the operations the organization performs to convert its raw materials or products into a state for resale. In the case of a manufacturing concern these may be various production-related activities such as production control, machining, finishing, etc. For a retail business these maybe the merchandising and display activities used to offer goods to customers for sale.
- **Outbound Logistics -** These are the activities performed to move merchandise between the seller and the purchaser. They may include selection, scheduling, transport, etc. of deliveries. Some businesses such as cash-and-carry wholesalers may not have such activities as these tasks are performed by the customer.
- **Marketing -** This includes all the activities performed to create demand for the organization's products and services and includes advertising, sales, market research, etc.

- **Service -** It pertains to the services rendered to the customer. These include financing services such as financing the outstanding balance, or after-sales service to products, or services to handle customer queries and complaints, etc.

Support Activities

- **Infrastructure -** This consists of the management structure which services the whole organization as well as structures such as reception, general postal services, messengers, financial accounting and other general activities. An attempt to trace these costs to any specific cost object will result in an inordinate amount of work. The total amount of such cost should be relatively small in comparison with total cost and this cost is usually considered to be untraceable. The cost of the physical infrastructure (plant, equipment, etc.) is considered part of the cost of activities where the infrastructure is used.
- **Human Resources Management-** This is the basic activity of overseeing the acquisition, maintenance and severance of staff and principally services the primary activities. Personnel departments, in-house medical services and even sports clubs may be part of this major activity.
- **Technology Development -** The development of technology today may require large sums of money take place over a lengthy period of time and ultimately benefit a multitude of users in the organization. This cost must thus be seen as any capital project which cannot be charged to users before the project is operative. Technology development cost could thus be capitalized and expensed to users over the useful life of the project. Cost of operating technology must, however, be traced to users on a usage basis. An example may be a large computer project which may take several years to complete. Users will only benefit from the project once it is operative and there is no point in charging this cost before such time.
- **Procurement -** The procurement activity services the organization as a whole by acquiring all necessary goods and services which the organization may require. If the activity is specifically related to the acquisition of, say, raw materials it could be seen as part of the inbound logistics process, i.e. a primary activity. If, however, the procurement activity cannot be linked to purchases for primary activities, it will be considered a secondary (support) activity.

The above value chain activities can, to a greater or lesser extent, be found in most businesses. The value chain serves as a useful mechanism to analyze an organization in order to determine what activities it performs to convert inputs .to outputs. It also helps to develop a good understanding of the primary and support activities.

(ii) Strategic leadership refers to a manager's potential to express a strategic vision for the organization, or a part of the organization, and to motivate and persuade others to acquire that vision. Strategic leadership can also be defined as utilizing strategy in the management of employees.

A few characteristics of effective strategic leaders that do lead to superior performance are as follows:

- **Loyalty-** Powerful and effective leaders demonstrate their loyalty to their vision by their words and actions.
- **Keeping them updated-** Efficient and effective leaders keep themselves updated about what is happening within their organization. They have various formal and informal sources of information in the organization.
- **Judicious use of Power-** Strategic leaders makes a very wise use of their power. They must play the power game skillfully and try to develop consent for their ideas rather than forcing their ideas upon others. They must push their ideas gradually.
- **Have wider perspective/outlook-** Strategic leaders just don't have skills in their narrow specialty but they have a little knowledge about a lot of things.

- **Motivation-** Strategic leaders must have a zeal for work that goes beyond money and power and also they should have an inclination to achieve goals with energy and determination.
- **Compassion-** Strategic leaders must understand the views and feelings of their subordinates, and make decisions after considering them.
- **Self-control-** Strategic leaders must have the potential to control distracting/disturbing moods and desires, i.e., they must think before acting.
- **Social skills-** Strategic leaders must be friendly and social.
- **Self-Awareness-** Strategic leaders must have the potential to understand their own moods and emotions, as well as their impact on others.
- **Readiness to delegate and authorize-** Effective leaders are proficient at delegation. They are well aware of the fact that delegation will avoid overloading of responsibilities on the leaders. They also recognize the fact that authorizing the subordinates to make decisions will motivate them a lot.
- **Articulacy-** Strong leaders are articulate enough to communicate the vision (vision of where the organization should head) to the organizational members in terms that boost those members.
- **Constancy/ Reliability-** Strategic leaders constantly convey their vision until it becomes a component of organizational culture.

To conclude, Strategic leaders can create vision, express vision, passionately possess vision and persistently drive it to accomplishment.

[Answer any 8 points]

(c)

(i) "The various PEST Analysis factors that a firm needs to consider and research in order to enter the restaurant business." – Discuss the various factors.

(ii) List the steps of implementing of Strategy.

(iii) Distinguish between Concentric Diversification and Conglomerate Diversification.

[8+3+4]

Answer:

(i) The various PEST Analysis factors that a firm needs to consider and research in order to enter the restaurant business in a new environment may be depicted as follows:-

Political Factors:

- Government regulations regarding hygiene, health and food regulations, food standards, etc.
- Economic policies of government regarding the restaurant industry and running eating joints; these may include licenses, inspections by Health and Food Ministry departments, etc.

Economic Factors:

- Interest rate would impact the cost of capital, the rate of interest being directly proportionate to the cost of capital.
- Rate of inflation determines the rate of remuneration of employees and directly affects the price of the restaurant's products. Again, the proportion between the inflation rate and wages/prices is direct.
- Economic trends act as an indicator of the sustenance and profitability of your business in the chosen region and help you in deciding your marketing strategy.

Social Factors:

- Certain cultures abhor certain foods. For instance, Hindus will not eat beef and Muslims would not even touch pork. Therefore knowledge of these cultural facts about your business environment will help you decide whether or not you'll be able to do any business there.
- Eating habits of the people in your chosen business environment may, and certainly will, affect your marketing decisions.
- Ratio of people preferring to eat out regularly.

Technological Factors:

- A good technical infrastructure would lead to better production, procurement and distribution logistics, resulting in reduced wastage and lower costs.
- Sound technology may be a decisive factor for food technology innovation, better presentation, more effective business marketing, etc.
  That was a sample PEST report. Hotel and food processing businesses would also have a similar PEST structure with some changes here and there. All in all, PEST analysis is a great way of getting to know the battlefield environment before you jump headlong into it.

(ii) Following are the main steps in implementing a strategy**:**

• Developing an organization having potential of carrying out strategy successfully.
• Disbursement of abundant resources to strategy-essential activities.
• Creating strategy-encouraging policies.
• Employing best policies and programs for constant improvement.
• Linking reward structure to accomplishment of results.
• Making use of strategic leadership.

(iii) Concentric diversification occurs when a firm adds related products or markets. On the other hand conglomerate diversification occurs when a firm diversifies into areas that are unrelated to its current line of business.

In concentric diversification, the new business is linked to the existing businesses through process, technology or marketing. In conglomerate diversification, no such linkages exist; the new business/product is disjointed from the existing businesses/products.

The most common reasons for pursuing a concentric diversification are that opportunities in a firm's existing line of business are available. However, common reasons for pursuing a conglomerate growth strategy is that opportunities in a firm's current line of business are limited or opportunities outside are highly lucrative.

Although diversification is supposed to reduce market risk, it carries dangers of its own. With conglomerate diversity, there's no guarantee that the businesses will be a good fit. A hardware store owner can buy a car wash, but if you don't know anything about how to run one, you'll have problems. And even if you hire someone to run it, you may not be able to tell with confidence if it's being run well. Dangers of concentric diversity include line overextension -- diluting the value of your brand by trying to do too much. If your new products or services don't measure up to the quality of your current offerings, that could hurt your existing sales as customers lose faith. And with both types, there is always the possibility that the diversification will just be a poor investment -- you'll misread the market and end up offering something that customers don't want.

3. Read the case and answer the following questions.

The Northern Division of Steel Craft and Furnishings makes and sells tables and beds. The following estimated revenue and cost information from the division's activity-based costing system is available for 2014.

	4,000 Tables (₹)	5,000 Beds (₹)	Total (₹)
Revenues (₹ 1,250 x 4,000; ₹ 2,000 x 5,000)	50,00,000	1,00,00,000	1,50,00,000
Variable direct materials and direct manufacturing labor costs (₹ 750 x 4,000; ₹ 1,050 x 5,000)	30,00,000	52,50,000	82,50,000

Depreciation on equipment used exclusively by each product line	4,20,000	5,80,000	10,00,000
Marketing and distribution costs ₹ 4,00,000 (fixed) + ₹ 7,500 per consignment x 40 consignments ₹ 6,00,000 (fixed) + ₹ 7,500 per consignment x 100 consignments	7,00,000	13,50,000	20,50,000
Fixed general administration costs of the division allocated to product lines on the basis of revenues	11,00,000	22,00,000	33,00,000
Allocated corporate-office costs allocated to product lines on the basis of revenues	5,00,000	10,00,000	15,00,000
Total costs	57,20,000	1,03,80,000	1,61,00,000
Operating income (loss)	(7,20,000)	(3,80,000)	(11,00,000)

Additional information includes:

- On January 1, 2014, the equipment has a book value of ₹ 10,00,000 and zero disposal value. Any equipment not used will remain idle.
- Fixed marketing and distribution costs of a product line can be avoided if the line is discontinued.
- Fixed general administration costs of the division and corporate-office costs will not change if sales of individual product lines are increased or decreased or if product lines are added or dropped.

(i) On the basis of financial considerations alone, should the Northern Division discontinue the table's product line, assuming the released facilities remain idle? Show your calculations.

(ii) What would be the effect on Northern Division's operating income if it were to sell 4,000 more tables? Assume that to do so the division would have to acquire additional equipment costing ₹ 4,20,000 with a one-year useful life and zero terminal disposal value. Assume further that the fixed marketing and distribution costs would not change but that the number of consignments would double. Show your calculations.

(iii) Suppose Steel Craft has the opportunity to open another division, the Southern Division, whose revenues and costs are expected to be identical to the Northern Division's revenues and costs (including a cost of ₹ 10,00,000 to acquire equipment with a one-year useful life and zero terminal disposal value). Opening the new division will have no effect on corporate office costs. Should Steel Craft open the Southern Division? Show your calculations.

(iv) Given the Northern Division's expected operating loss of ₹ 11,00,000, should Steel Craft and Furnishings shut it down? Assume that shutting down the Northern Division will have no effect on corporate-office costs but will lead to savings of all general administration costs of the division. Show your calculations.

(v) Suppose the manager at corporate headquarters responsible for making the decision of whether to shut down the Northern Division will be evaluated in 2014 on the Northern Division's operating income after allocating' corporate-office costs. Will the manager prefer to shut down the division? Is the decision model consistent with the performance evaluation model? Explain. [(2+2)+3+(3+2)+3+(3+2)]

Answer:

(i) The incremental revenue losses and incremental savings in cost by discontinuing the Tables product line follows:

	Difference: Incremental (Loss in Revenues) and Savings in Costs from Dropping Tables Line
Revenues	₹ (50,00,000)
Direct materials and direct manufacturing labor	30,00,000
Depreciation on equipment	0
Marketing and distribution	7,00,000

General administration Corporate office costs	0 0
Total costs	37,00,000
Operating income (loss)	₹ (13,00,000)

Dropping the Tables product line results in revenue losses of ₹ 50,00,000 and cost savings of ₹ 37,00,000. Hence, Steel Craft's and Furnishing's operating income will be ₹ 13,00,000 higher if it does not drop the Tables line.

Note that, by dropping the Tables product line, Steel Craft and Furnishings will save none of the depreciation on equipment, general administration costs, and corporate office costs, but it will save variable manufacturing costs and all marketing and distribution costs on the Tables product line.

(ii) Steel Craft's will generate incremental operating income of ₹ 12,80,000 from selling 4,000 additional tables and, hence, should try to increase table sales. The calculations follow:

	Incremental Revenues (Costs) and Operating Income
Revenues Direct materials and direct manufacturing labor Cost of equipment written off as depreciation Marketing and distribution costs General administration costs Corporate office costs	₹50,00,000 (30,00,000) (4,20,000)* (3,00,000)† 0** 0**
Operating income	₹ 12,80,000

*Note that the additional costs of equipment are relevant future costs for the "selling more tables decision" because they represent incremental future costs that differ between the alternatives of selling and not selling additional tables.

†Current marketing and distribution costs which varies with number of consignments = ₹ 7,00,000 – ₹ 4,00,000 = ₹ 3,00,000. As the sales of tables double, the number of consignments will double, resulting in incremental marketing and distribution costs of (2 x ₹ 3,00,000) – ₹ 3,00,000 = ₹ 3,00,000.

**General administration and corporate office costs will be unaffected if Steel Craft and Furnishings decides to sell more tables. Hence, these costs are irrelevant for the decision.

(iii) Column 2, presents the relevant revenues and relevant costs of opening the Southern Division (a division whose revenues and costs are expected to be identical to the revenues and costs of the Northern Division). Steel Craft should open the Southern Division because it would increase operating income by ₹ 4,00,000 (increase in relevant revenues of ₹ 1,50,00,000 and increase in relevant costs of ₹ 1,46,00,000). The relevant costs include direct materials, direct manufacturing labor, marketing and distribution, equipment, and division general administration costs but not corporate office costs.
Note, in particular, that the cost of equipment written off as depreciation is relevant because it is an expected future cost that Steel Craft will incur only if it opens the Southern Division. Corporate office costs are irrelevant because actual corporate office costs will not change if Steel opens the Southern Division. The current corporate staff will be able to oversee the Southern Division's operations. Steel Craft will allocate some corporate office costs to the Southern Division but this allocation represents corporate office costs that are already currently being allocated to some other division. Because actual total corporate office costs do not change, they are irrelevant to the division.
Relevant-Revenue and Relevant-Cost Analysis for Closing Northern Division and Opening Southern Division

	(Loss in Revenues) and Savings in Costs from Closing Northern Division	Incremental Revenues and (Incremental Costs) from Opening Southern Division
	(1)	(2)
Revenues	₹ (1,50,00,000)	₹ (1,50,00,000)
Variable direct materials and direct manufacturing labor costs	82,50,000	82,50,000
Equipment cost written off as depreciation	0	(10,00,000)
Marketing and distribution costs	20,50,000	(20,50,000)
Division general administration costs	33,00,000	(33,00,000)
Corporate office costs	0	0
Total costs	1,36,00,000	(1,46,00,000)
Effect on operating income (loss)	₹ (14,00,000)	₹ 4,00,000

(iv) In aforesaid solution in Column 1, presents the relevant loss of revenues and the relevant savings in costs from closing the Northern Division. As the calculations show. Steel Craft's operating income would decrease by ₹ 14,00,000 if it shuts down the Northern Division (loss in revenues of ₹ 1,50,00,000 versus savings in costs of ₹ 1,36,00,000).

Steel Craft will save variable manufacturing costs, marketing and distribution costs, and division general administration costs by closing the Northern Division but equipment related depreciation and corporate office allocations are irrelevant to the decision. Equipment related costs are irrelevant because they are past costs (and the equipment has zero disposal price). Corporate office costs are irrelevant because Steel Craft will not save any actual corporate office costs by closing the Northern Division. The corporate office costs that used to be allocated to the Northern Division will be allocated to other divisions.

(v) The manager at corporate headquarters responsible for making the decision is evaluated on Northern Division's operating income after allocating corporate office costs. The manager will evaluate the options as follows: If the manager does not close the Northern Division in 2014, the division is expected to show an operating loss of ₹ 11,00,000 after allocating all corporate office costs. If the manager closes the Northern Division, the division would show an operating loss of ₹ 10,00,000 from the write off of equipment. It would show no revenues and, hence, would not attract any corporate office costs. It would also not incur any manufacturing, marketing and distribution, and general administration costs.

From the viewpoint of maximizing the operating income against which the manager is evaluated, the manager would prefer to shut down Northern Division (and show an operating loss of ₹ 10,00,000 instead of an operating loss of ₹ 11,00,000 by operating it). In fact, the manager might argue that even the ₹ 10,00,000 operating loss is more a consequence of accounting write offs rather than a "real" operating loss.

Recall from requirement 1 that the decision model favored keeping the Northern Division open. The performance evaluation model of the manager making the decision suggests that the Northern Division be closed. Hence, the performance evaluation model is inconsistent with the decision model.

4. Answer any two questions from (a), (b) and (c): [2×15=30 marks]

(a)

(i) The data of running costs per year and resale price of equipment A whose purchase price is ₹2,00,000 are as follows:

Year-	I	II	III	IV	V	VI	VII
Running cost (₹ '000)	**30**	**38**	**46**	**58**	**75**	**90**	**110**
Resale value (₹ '000)	**100**	**50**	**25**	**12**	**8**	**8**	**8**

I. What is the optimum period for replacement?

II. When equipment A's age is two years old, equipment B which is a new model for the same usage is available. The optimum period for replacement is 4 years with an average cost of ₹ 72,000. Should equipment A be changed with equipment B? If so, in which year it will be replaced? [3+1+3]

Answer:

The calculations of average cost per year during the life of the Equipment A:

Year	Running cost (₹)	Cumulative Running cost	Resale price	Cumulative Dep. cost	Cumulative Total Cost	Average cost per year
1	30,000	30,000	1,00,000	1,00,000	1,30,000	1,30,000
2	38,000	68,000	50,000	1,50,000	2,18,000	1,09,000
3	46,000	1,14,000	25,000	1,75,000	2,89,000	96,333
4	58,000	1,72,000	12,000	1,88,000	3,60,000	90,000
5	72,000	2,44,000	8,000	1,92,000	4,36,000	87,200
6	90,000	3,34,000	8,000	1,92.000	5,26,000	87,667
7	1,10,000	4,44,000	8,000	1,92,000	6,36,000	90,857

I. As average cost per year of ₹87,200 is minimum in 5th year so Equipment A should be replaced at the end of the 5th year.

II. Given, the optimum period for replacement of Equipment B is 4 years with an average cost of ₹72,000. As minimum average cost of B is lower than minimum average cost of Equipment A. **So A should be replaced by B.**

As, Equipment A is two years old, so total cost per year of A from 3rd year is as follows:

Year of services	Total cost per year (₹)
3	2,89,000 - 2,18,000 = 71,000
4	3,60,000 - 2.89,000 = 71,000
5	4,36,000 - 3,60,000 = 76,000
6	5,26,000 - 4,36,000 = 90,000
7	6,36,000 - 5,26,000 = 1,10,000

As the total cost per year of A is higher in 5th year than the minimum average cost of Equipment B (i.e. ₹72.000) so Equipment A should be replaced at the end of the 4th year.

(ii) Discuss the role of a Firm's suppliers in its Value Engineering or Cost Reduction drive. [4]

Answer:

Value Engineering also involves calling on the services of a Company's suppliers to assist in the cost reduction efforts. Suppliers of materials can have significant role in value engineering due to the following reasons:-

- Suppliers can contribute information on enhanced types of technology of materials.
- Supplier specialize in areas that a Company has no information about and can share product expertise.
- They may have also conducted extensive value engineering for the components they manufacture, resulting in advanced designed that a Company may be able to incorporate into its new products.

- Suppliers may have also redesigned their production process, or can be assisted by a Company's engineers in doing so, producing cost reductions or decreased production waste that can be translated into lower component costs for the Company.

(iii) Fit straight line by the least square method to the following figures of production of Sugar Factory. Estimate the production for the year 2015.

Year	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Production(in Lakh tons)	**76**	**87**	**95**	**81**	**91**	**96**	**90**

[4]

Answer:

Analysis of Trend by Least square Method

Year	**x**	**Y (production)**	**xy**	**x^2**
2008	-3	76	-228	9
2009	-2	87	-174	4
2010	-1	95	-95	1
2011	0	81	0	0
2012	1	91	91	1
2013	2	96	192	4
2014	3	90	270	9
Total	0	$\sum y = 616$	$\sum xy = 56$	

The two normal equations are as under:

Equation 1	**Equation** 2
$\sum y = na + b\sum x$	$\sum xy = a\sum x + b\sum x^2$
So, 616=7a+ b (0)	56=88 (0)+b (28)
So, 7a= 616	56=28b
a=616÷ 7=88	b=56÷28=2

The first degree polynomial trend equation (straight line trend) is Y=a+ bx

So, Y=88+2x (where original year is 2011, x=1 year unit)

Estimated production for the year 2015: Here, x=4 (i.e. from 2011 to 2015)

So, Y=88+2(4); 88+8=96.

Hence, production for the year 2015= 96 lakh tons.

(b)

(i) Distinguish between Cost Reduction and Cost Management. **[3]**

Answer:

Difference between Cost Reduction and Cost Management

Particulars	**Cost Reduction**	**Cost Management**
Meaning	It is the permanent reduction in the unit cost of goods or services without affecting their quality or suitability for their intended use.	It is a system that establishes linkages between costs and revenues and relates them with the product to maximize Firm's profits.
Objective	Critical examination of each aspect of business and their analysis and review to improve the efficiency and effectiveness so as to reduce costs through techniques of Value Analysis, Work Study, Standardization etc.	Optimal utilization of resources to enhance the operating income of the business entity.
Nature of process	It presumes the existence of concealed potential savings in norms or standards and therefore it is a corrective process.	It does not focus on costs independent of revenue nor considers product attributes as given. It is a wholistic control process.

(ii) Hazra Ltd presently has its inventory turnover (based on Cost of Goods Sold ÷ Average Inventory) at 10 times p.a., as compared with the industry average of 4. Average Sales are ₹4,50,000 p.a. Variable Cost of Sales are 70% of Sales and Fixed Costs are ₹10,000 per annum. Carrying Costs of inventory (excluding financing costs) are 5% per annum. Sales force complained that low inventory levels are resulting in lost sales due to Stock-outs. The Sales Manager has made an estimate based on stock-out reports as under –

Inventory Policy	Inventory Turnover	Sales
Current	10	₹4,50,000
A	8	₹5,00,000
B	6	₹5,40,000
C	4	₹5,70,000

On the basis of the above estimates and assuming a 40% tax rate and an after-tax required return of 20% on investment in inventory, which policy would you recommend? [6]

Answer:

Evaluation of Inventory Turnover Policies

Particulars	Current	Policy A	Policy B	Policy C
Sales	4,50,000	5,00,000	5,40,000	5,70,000
Less: Variable Costs at 70%	3,15,000	3,50,000	3,78,000	3,99,000
Contribution	1,35,000	1,50,000	1,62,000	1,71,000
Less: Fixed Costs (given)	10,000	10,000	10,000	10,000
Profit before Tax	1,25,000	1,40,000	1,52,000	1,61,000
Less: Tax at 40%	50,000	56,000	60,800	64,400
Profit after Tax	75,000	84,000	91,200	96,600
Cost of Goods Sold (VC + FC)	3,25,000	3,60,000	3,88,000	4,09,000
Inventory Turnover Ratio (given)	10 times	8 times	6 times	4 times
Average Inventory (COGS ÷ T/o Ratio)	32,500	45,000	64,667	1,02,250
Carrying Cost of Inventory at 5% (a)	1,625	2,250	3,233	5,113
Opportunity Cost at 20% of Capital blocked in Average Inventory (b)	6,500	9,000	12,933	20,450
Total Cost of Inventory Holding (a + b)	8,125	11,250	16,166	25,563
Net Benefit = PAT - Total Cost of Inv.	66,875	72,750	75,034	71,037

Decision: As Net Benefit is maximum under Policy B, it may be chosen.

(iii) A Factory manufactured a Tape Recorder , the estimated costs of which are as follows:

Direct Material	**₹20 each**
Direct wages	**10 hours at Re.1.00 per hour**
Overhead absorption Rate	**₹2.00 per hour.(50% fixed overhead included)**

During this period, 10,000 units will be produced and sold as follows:-

9,000 units of first at	**₹60 each**
500 units of second at	**₹50 each**
500 units of third at	**₹30 each**

Present information to management showing the loss due to the production of inferior units.

By reprocessing the inferior units, taking the full re-processing time of a further 3 hours and adding further materials, costing ₹14 per unit, these 'seconds' and 'thirds' can be converted into 'firsts'

Present information to the management. [6]

Answer:

Present position (Based on 10,000 units production) Cost per unit:

		(₹)
Direct material		20
Direct wages	(10 hrs. @Re.1.00)	10
Overheads	(10 hrs. @₹2.00)	20

Total		50

	Per unit		Units	Total	
Particulars	Sales price (₹)	Profit/Loss (₹)		Profit (₹)	Loss (₹)
First	60	10	9,000	90,000	
Seconds	50	-	500	-	
Thirds	30	(20)	500	-	10,000
				90,000	10,000
			Net profit		80,000

Reprocessing of Inferior units

(a) Additional expenditure for reprocessing per unit

	(₹)
Direct material	14
Direct wages 3 hrs.	3
Variable overhead @ Re. 1.00	3
Total	20

Total expenditure for 100 units=100X ₹20= ₹2,000

(b) Additional revenue

		(₹)
Seconds	(₹60-₹50)X 500units	5,000
Thirds	(₹60-₹30) X 500	15,000
		20,000

Note: No change in the profit position hence this need not be considered.

(c)

(i) HN Ltd., has a productive capacity of 2,00,000 units of product BXE per annum. The company estimated its normal capacity utilisation at 90% for 2013-14. The variable costs are ₹22 per unit and the fixed factory overheads were budgeted at ₹7,20,000 per annum. The variable selling overheads amounted to ₹6 per unit and the fixed selling expenses were budgeted at ₹5,04,000. The operating data for 2013- 14 are as under:

Production	**1,60,000 units**
Sales @ ₹38 per unit	**1,50,000 units**
Opening stock of finished goods	**10,000 units**

The cost analysis revealed an excess spending of variable factory overheads to the extent of ₹80,000. There are no variances in respect of other items of cost.

Required:

I. **Determine the budgeted break-even point for 2013-14**

II. **What increase in price would have been necessary to achieve the budgeted profit?**

III. **Present statements of profitability for 2013-14 using:**
   - **Marginal costing basis.**
   - **Absorption costing basis.** **[2+2+3+3]**

Answer:

I. Fixed cost = Fixed overheads + selling expenses = 7,20,000+5,04,000 = 1,22,4000

	Rs.
I Selling price	38.00
II Variable cost	28.00
III Contribution	10.00

Break even at budget= (12,24,000/10) = 1,22,400 units

II. Contribution at budget = [(2,00,000x90%)x10]= 18,00,000

	₹
Contribution per unit (21,60,000/1,50,000)	12.00

Add : Variable cost	28.00
	40.00
Increase in Price	2.00
Standard variable production cost	22.00
Add: Standard fixed cost (7,20,000/2,00,000x90%)	4.00
	26.00

Profit under Absorption Costing

		Units	₹	₹
Standard Variable Cost	(1,60,000 × 22)			35,20,000.00
Add: Variance				80,000.00
				36,00,000.00
Add: Fixed Production cost absorbed	(1,60,000 × 4)		6,40,000.00	
Add: Under recovery	(7,20,000 – 6,80,000)		80,000.00	7,20,000.00
		1,60,000.00		43,20,000.00
Add: Opening stock		10,000.00		2,60,000.00
				45,80,000.00
Less: Closing stock		20,000.00	(43,20,000/ 1,60,000×20,000)	5,40,000.00
				40,40,000.00
Add: Selling & Dis. Cost				
Variable	(1,50,000×6)		9,00,000.00	
Fixed			5,04,000.00	14,04,000.00
Total Cost				54,44,000.00
Profit (b/f)				2,56,000.00
Sales	(1,50,000×38)			57,00,000.00
Profit under Marginal Costing				
Sales(A)				60,00,000.00
Variable cost				
Production			36,00,000.00	
Add: Opening	(10,000×22)		2,20,000.00	
			38,20,000.00	
Less: Closing	(20,000×36,00,000)/ 1,60,000		4,50,000.00	33,70,000.00
Selling & dist.				9,00,000.00
Total Variable Cost (B)				42,70,000.00
Contribution				14,30,000.00
Fixed Cost				12,24,000.00
Profit				2,06,000.00

(ii) Distinguish between PERT (Program Evaluation and Review Technique) and CPM (Critical Path Management). [5]

Answer:

Differences between PERT & CPM

	PERT	CPM
I.	It is a technique for planning scheduling & controlling of projects whose activities are subject to uncertainty in the performance	It is a technique for planning scheduling & controlling of projects whose activities not subjected to any uncertainty and the performance times are fixed. Hence it is a

	time. Hence it is a probabilistic model.	deterministic model.
II.	It is an Event oriented system	It is an Activity oriented system
III.	Basically does not differentiate critical and non-critical activities.	Differentiates clearly the critical activities from the other activities.
IV.	Used in projects where resources (men, materials, money) are always available when required.	Used in projects where overall costs is of primarily important. Therefore better utilized resources.
V.	Suitable for Research and Development projects where times cannot be predicted.	Suitable for civil constructions.